

Application No. 10/825,395

In Response to Office Action Mailed on September 18, 2007

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CLAIMS

Please amend Claims 2, 4-6, 10, 11, and 19-27 and add new Claims 28-35 as shown in the Listing of the Claims that follows. This Listing replaces any prior listings of claims concerning the present Application.

LISTING OF THE (AMENDED) CLAIMS

1. (Original) A method that maps any input color from an image to an output color, the method using a two-dimensional lookup table that contains mapping for a portion of the colors of the image and using color information associated with an input color from the image, the method comprising:

determining mapping information for table entries nearest to an input color; and

interpolating the mapping information for the nearest table entries to obtain color information for an output color corresponding to the input color.

2. (Currently Amended) The method according to claim 1 wherein ~~determining~~ interpolating said mapping information for the nearest table entries comprises:

determining mapping information of a first ~~nearest~~ table entry corresponding to a color represented by the lookup table and closest to the input color;

determining mapping information of a second table entry a table entry away from the first table entry in a first direction in the lookup table;

determining mapping information of a third table entry a table entry away from the first table entry in a second direction in the lookup table;

determining mapping information of a fourth table entry a table entry away from the third table entry in a first direction in the lookup table; and

wherein the input color is located between the nearest table entries.

3. (Original) The method according to claim 1 wherein the mapping information of a table entry comprises color information associated with the table entry and a mapping condition associated with the table entry.

4. (Currently Amended) The method according to claim 3 wherein the mapping condition indicates whether the color information associated with the table entry is to be used when the mapping condition is asserted.

5. (Currently Amended) The method according to claim 4 wherein the mapping condition indicates whether the color information of the input color is to be used when the mapping condition is not asserted.

6. (Currently Amended) The method according to claim 5 wherein the color information of the input color is output without performing any mapping when the mapping condition is not asserted ~~for all the nearest table entries.~~

7. (Original) The method according to claim 6 wherein the brightness of the input color is mapped to an output brightness using brightness information of the table entries when the color information of the input color is output without performing any mapping.

8. (Original) The method according to claim 2 wherein the four nearest table entries are used to map the color of the input color.

9. (Original) The method according to claim 2 wherein two or one nearest table entries are used to map the color of the input color when the input color is near an edge of the look up table.

10. (Currently Amended) A system that maps any input color from an image to an output color, the system comprising:

a two-dimensional lookup table that contains mapping for a portion of the colors of the image; and

at least one processor capable of determining mapping information for table entries nearest to an input color; ~~and~~

the at least one processor capable of interpolating the mapping information for the nearest table entries to obtain color information for an output color corresponding to the input color.

11. (Currently Amended) The system according to claim 10 wherein the at least one processor capable of determining mapping information for the nearest table entries comprises:

the at least one processor capable of determining mapping information of a first ~~nearest~~ table entry corresponding to a color represented by the lookup table and closest to the input color;

the at least one processor capable of determining mapping information of a second table entry a table entry away from the first table entry in a first direction in the lookup table;

the at least one processor capable of determining mapping information of a third table entry a table entry away from the first table entry in a second direction in the lookup table;

the at least one processor capable of determining mapping information of a fourth table entry a table entry away from the third table entry in a first direction in the lookup table; and

wherein the input color is located between the nearest table entries.

12. (Original) The system according to claim 10 wherein the mapping information of a table entry comprises color information associated with the table entry and a mapping condition associated with the table entry.

13. (Original) The system according to claim 12 wherein the mapping condition indicates the color information associated with the table entry is to be used when the mapping condition is asserted.

14. (Original) The system according to claim 13 wherein the mapping condition indicates the color information of the input color is to be used when the mapping condition is not asserted.

15. (Original) The system according to claim 14 wherein the color information of the input color is output without performing any mapping when the mapping condition is not asserted for all the nearest table entries.

16. (Original) The system according to claim 15 wherein the brightness of the input color is mapped to an output brightness when the color information of the input color is output without performing any mapping.

17. (Original) The system according to claim 11 wherein the four nearest table entries are used to map the color of the input color.

18. (Original) The system according to claim 11 wherein two or one nearest table entries are used to map the color of the input color when the input color is near an edge of the look up table.

19. (Currently Amended) A ~~machine-readable storage~~ computer-readable medium having stored thereon, a computer program having at least one code section that maps any input color from an image to an output color using a two-dimensional lookup table that contains mapping for a portion of the colors of the image and using color information associated with an input color from the image, the at least one code section being executable by a ~~machine-computer~~ for causing the ~~machine-computer~~ to perform steps comprising:

determining mapping information for table entries nearest to an input color; and

interpolating the mapping information for the nearest table entries to obtain color information for an output color corresponding to the input color.

20. (Currently Amended) The ~~machine-computer-readable storage-medium~~ according to claim 19 wherein the code for determining mapping information for the nearest table entries comprises:

code for determining mapping information of a first ~~nearest~~-table entry corresponding to a color represented by the lookup table and closest to the input color;

code for determining mapping information of a second table entry a table entry away from the first table entry in a first direction in the lookup table;

code for determining mapping information of a third table entry a table entry away from the first table entry in a second direction in the lookup table;

code for determining mapping information of a fourth table entry a table entry away from the third table entry in a first direction in the lookup table; and

wherein the input color is located between the nearest table entries.

21. (Currently Amended) The ~~machine~~computer-readable ~~storage-medium~~ according to claim 19 wherein the mapping information of a table entry comprises color information associated with the table entry and a mapping condition associated with the table entry.

22. (Currently Amended) The ~~machine~~computer-readable ~~storage-medium~~ according to claim 21 wherein the mapping condition indicates the color information associated with the table entry is to be used when the mapping condition is asserted.

23. (Currently Amended) The ~~machine~~computer-readable ~~medium~~storage according to claim 22 wherein the mapping condition indicates the color information of the input color is to be used when the mapping condition is not asserted.

24. (Currently Amended) The ~~machine~~computer-readable ~~storage-medium~~ according to claim 23 wherein the color information of the input color is output without performing any mapping when the mapping condition is not asserted for all the nearest table entries.

25. (Currently Amended) The ~~machine~~computer-readable ~~storage-medium~~ according to claim 24 wherein the brightness of the input color is mapped to an output brightness using

brightness information of the table entries when the color information of the input color is output without performing any mapping.

26. (Currently Amended) The ~~machine~~computer-readable ~~storage~~-medium according to claim 20 wherein the four nearest table entries are used to map the color of the input color.

27. (Currently Amended) The ~~machine~~computer-readable ~~storage~~-medium according to claim 20 wherein two or one nearest table entries are used to map the color of the input color when the input color is near an edge of the look up table.

28. (New) A method for performing color mapping of a pixel in a video image using a first pair of red chrominance and blue chrominance values, and a first luminance value, said method comprising:

indexing a two dimensional lookup table using said first pair of red chrominance and blue chrominance values;

adding an offset value to said first luminance value to generate a second luminance value;

outputting a second pair of red chrominance and blue chrominance values based on said indexing; and

outputting said second luminance value.

29. (New) The method of Claim 28 further comprising:

third generating a plurality of paired red and blue chrominance values if said second pair of red chrominance and blue chrominance values are absent in said two dimensional lookup table, said plurality of paired red chrominance and blue chrominance values generated by way of indexing spatially adjacent locations in said two dimensional lookup table;

interpolating said plurality of paired red chrominance and blue chrominance values to generate an interpolated pair of red and blue chrominance values; and

outputting said interpolated pair of red and blue chrominance values instead of said second pair of red chrominance and blue chrominance values.

30. (New) The method of Claim 28 wherein said indexing said two dimensional lookup table indexes a table entry comprising said second pair of red chrominance and blue chrominance values and a bit that indicates whether said second pair of red chrominance and blue chrominance values are to be used or whether said first pair of red chrominance and blue chrominance values are to be used, said second pair of red chrominance and blue chrominance values comprising a red chrominance value represented by 8 bits, and a blue chrominance value represented by 8 bits.

31. (New) A system for performing color mapping of a pixel in a video image comprising:

a two dimensional lookup table used for mapping a first pair of red chrominance and blue chrominance values to a second pair of red chrominance and blue chrominance values; and

an interpolator for interpolating a plurality of paired red and blue chrominance values if said second pair of red chrominance and blue chrominance values is not used.

32. (New) The system of Claim 31 further comprising:

an offset circuitry for adding an offset value to a luminance value associated with said first pair of red chrominance and blue chrominance values.

33. (New) The system of Claim 31 wherein said mapping indexes a table entry comprising said second pair of red chrominance and blue chrominance values and a bit that indicates whether said second pair of red chrominance and blue chrominance values are to be used or whether said first pair of red chrominance and blue chrominance values are to be used.

34. (New) The system of Claim 33 wherein said second pair of red chrominance and blue chrominance values comprises a red chrominance value represented by 8 bits, and a blue chrominance value represented by 8 bits.

35. (New) The system of Claim 31 wherein said plurality of paired red chrominance and blue chrominance values is obtained by way of indexing spatially adjacent locations in said two dimensional lookup table.